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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,825	12/11/2003	Juergen Motzer	OMT/16	2211
26875	7590	04/20/2005	EXAMINER	
WOOD, HERRON & EVANS, LLP 2700 CAREW TOWER 441 VINE STREET CINCINNATI, OH 45202			FITZGERALD, JOHN P	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/733,825	Applicant(s) MOTZER ET AL.	
	Examiner John P. Fitzgerald	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-13, 15-20 and 22-26 is/are rejected.
- 7) ☒ Claim(s) 8, 14 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 and 20 have been considered but are moot in view of the new ground(s) of rejection.
2. In specific regards to Applicant's recited "exposed sensor head," the Examiner must point out that the instant specification is devoid of any definition or clarification of the term "exposed," (as recited in claims 1 and 20) and since the instant Figures fail to add any illumination on the term, since appears from the instant Figures that there is some sort of "housing" around the actual sensor head that emits/receives the microwave signals, and as such, the Eckert et al. reference meets this limitation.

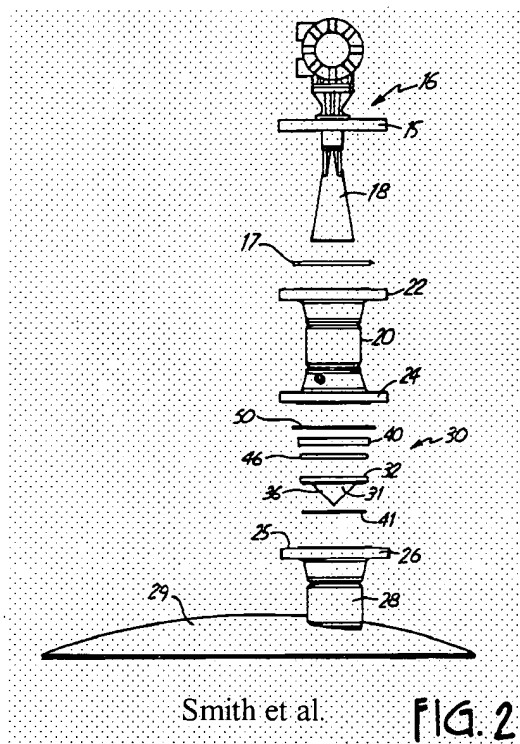
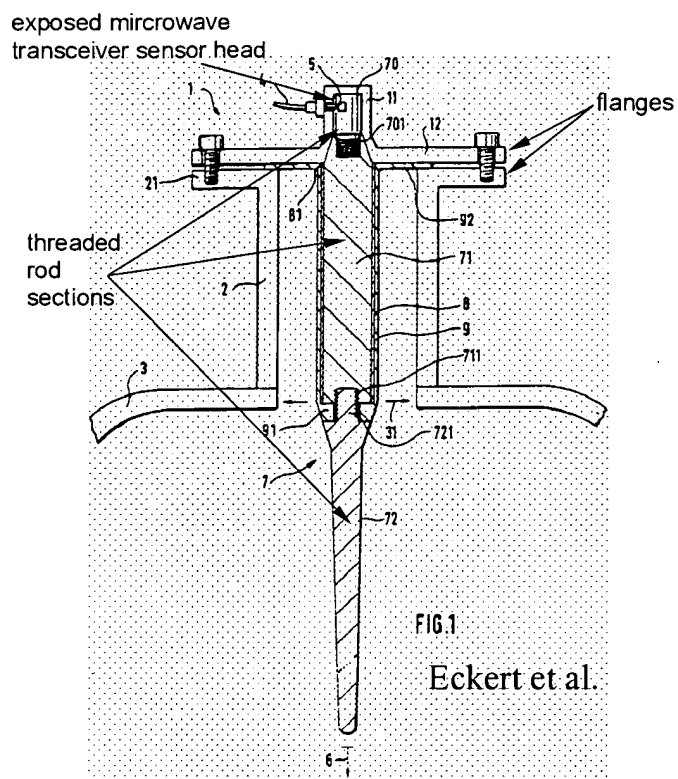
Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,155,112 to Eckert et al. and US 6,325,391 to Smith et al. Eckert et al. disclose an apparatus for use in measuring fluid levels in a container (3) (Figs. 1 and 2) by determining the point where an upper fluid contacts a gas having an exposed microwave transceiver sensor head (5) (as recited in claims 1 and 2) (Eckert et al.: col. 5, lines 12-17); a sensor rod/waveguide (7) comprised of a plurality of circular cross-sections, threaded rod sections (70, 71, 72) allowing for screwed-connections (as recited in claims 1 and 3-5); wherein the outer surface of the rod sections may "have different cross-sectional geometries, compatible with the mode to be

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transmitted and the transmission frequency or frequencies, thus inherently encompassing recitations of claims 1, 6 and 7, that is, having “equal width,” flat or hexagonal cross-sections) (Eckert et al: col. 5, lines 54-56) and further having a head flange (12) adapted to be connected to a corresponding container flange (21) (see Fig. 1 below) wherein the head and the rod sections may be removed from the container as a unit. Eckert et al. do not expressly disclose an apparatus for measuring fluid levels wherein the sensor head and the rod sections may be removed from the container without removing the head flange. Smith et al. disclose an apparatus for measuring fluid levels in a container (Figs. 1-4) wherein the sensor head (16) is attached via a series of sections and flanges (i.e. “sandwiches”) to a container (29) (see Fig. 2 below), allowing for the removal of the sensor head and antenna (18) maybe removed as a unit, separately from flange mountings (22, 24, 26). It would have been obvious to one having ordinary skill in the art at the time the invention was made to mount the sensor head and antenna, as recited in claim 9, as taught by Smith et al., modifying the apparatus for measuring fluid levels disclosed by Eckert et al., thus providing proper electromagnetic shielding, proper securing and sealing to the container, capable of withstanding high pressures and temperatures, as well as permitting installation (and removal) without obtaining a separate license from agencies such as the Federal Communications Commission. Futhermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the sensor head and antenna rod sections in any desired manner, forming it in different sub-components, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Newin v. Erlichman*, 168 USPQ 177 (BdPatApp&Int 1969).

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5. Claims 10-13 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US 6,155,112 to Eckert et al. and US 6,325,391 to Smith et al. as applied to claim 1 above, and further in view of US 6,184,818 to Meinel. Eckert et al. disclose an apparatus for use in measuring fluid levels within a container having all of the elements stated previously, including a rod comprised of a plurality of screwed together rod sections. Eckert et al. do not expressly disclose an apparatus for measuring fluid levels wherein the sensor head and the rod sections may be removed from the container without removing the head flange. Smith et al. disclose an apparatus for measuring fluid levels in a container (Figs. 1-4) wherein the sensor head (16) is attached via a series of sections and flanges (i.e. "sandwiches") to a container (29) (see Fig. 2 below), allowing for the removal of the sensor head and antenna (18) maybe removed as a unit, separately from flange mountings (22, 24, 26). It would have been obvious to one having ordinary skill in the art at the time the invention was made to mount the sensor head and antenna, as recited in claim 9, as taught by Smith et al., modifying the apparatus for measuring fluid levels disclosed by Eckert et al., thus providing proper electromagnetic shielding, proper securing and sealing to the container, capable of withstanding high pressures and temperatures, as well as permitting installation (and removal) without obtaining a separate license from agencies such as the Federal Communications Commission. Futhermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the sensor head and antenna rod sections in any desired manner, forming it in different sub-components, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Newin v. Erlichman*, 168 USPQ 177 (BdPatApp&Int 1969). Eckert et al. and Smith et al. do not expressly disclose the employment of tamper-proof restraints attached to

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the head flange (as recited in claim 10); a tube surrounding the rod, the tube comprising a plurality of tube sections adapted to be connected together (via a plurality of fasteners) and a plurality of circumferentially and longitudinally spaced slots in the tube and which are positioned on the tube so as to allow fluid equalization within the tube (as recited in claims 11, 13 and 15); wherein the rod sections are adapted to be connected/disconnected together and inserted/removed from the tube without disconnecting the tube sections (as recited in claim 12); wherein at least one tube section is curved (as recited in claim 14). Meinel teaches an apparatus for measuring fluid levels within a container (2) (Figs. 1-4) having a rod (6) surrounded by a hollow tube (11) for guiding a coupled-in microwave generated at a sensor head (4); the tube having a plurality of holes/openings (10, 16) (note: size and shape of the openings, such as slots are obvious variants known to one of ordinary skill in the art) located circumferentially and longitudinally of the tube for allowing flow into the tube (Meinel: claim 7) and contact the rod. Meinel further teaches the removal/insertion of the tube and rod and subsequent retrofitting (Meinel: col. 3, lines 9-22). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a tube having openings surrounding the rod, as taught by Meinel, forming it in a plurality sections, utilizing any type of well known fasteners or threaded ends, and or coupling flanges (as recited in claim 13), similar to the rod sections disclosed by Eckert et al. and Smith et al., since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Newin v. Erlichman*, 168 USPQ 177 (BdPatApp&Int 1969). In specific regards to claim 10, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide tamper-proof restraints/connectors in securing the flanges of the apparatus since it was known in

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the art that tamper-proof fasteners and similar connectors are employed by those of ordinary skill when it so desired to prevent accidental or intentional tampering, and as such, is considered a design choice well within the purview of one having ordinary skill in the art. Lastly, functional recitation(s) using the words “for” and “adapted to” have been given little patentable weight because they fail to add any structural limitations and thereby regarded as intended use language. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Finstewalder*, 436 F.2d 1028, 168 USPQ 530 (CCPA 1971); *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) (“The manner or method in which such machine is to be utilized is not germane to the issue of patentability of the machine itself.”); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). When interpreting functional language, if the prior art is capable of performing the claimed function—even if not directly disclosed—it anticipates. *In re Schreiber*, 128 F.3d 1473, 1478, 44 USPQ2d 1429, 1432 (Fed. Cir. 1997); *In re Sinex*, 309 F.2d 488, 135 USPQ 302 (CCPA 1962). See also MPEP § 2114, 2115.

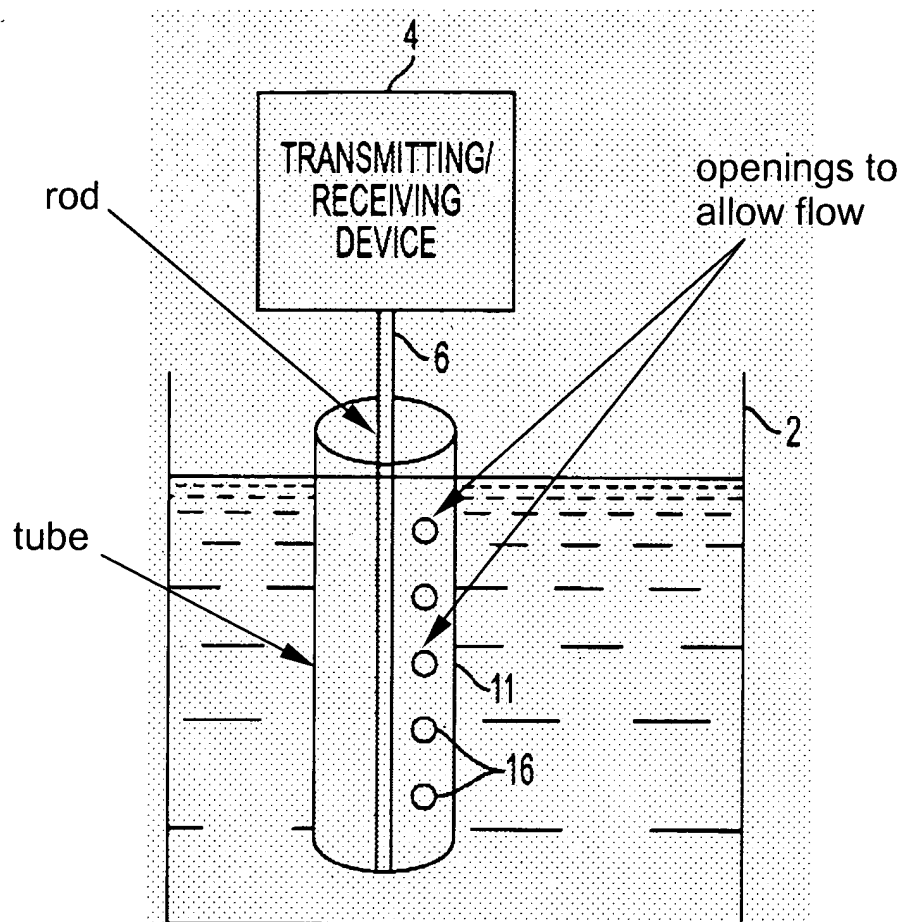
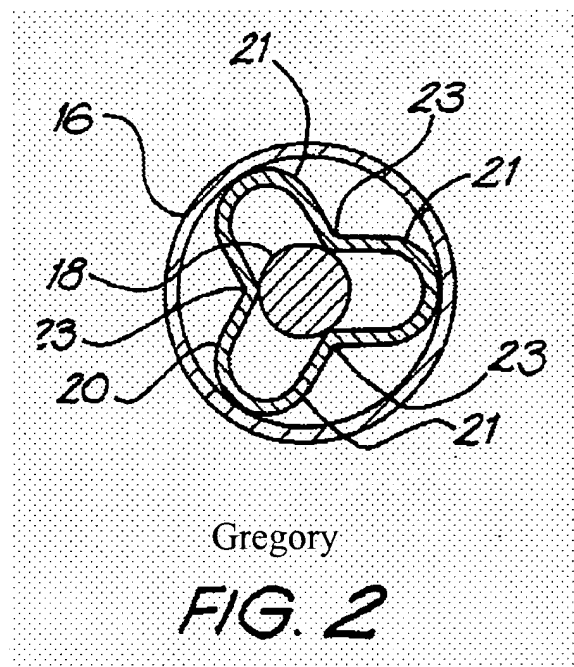


FIG. 4 Meinel

6. Claims 16-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US 6,155,112 to Eckert et al., US 6,325,391 to Smith et al. and US 6,184,818 to Meinel, as applied to claim 11 above, and further in view of GB 2385478 A to Gregory. Eckert et al. and Meinel disclose an apparatus for use in measuring fluid levels within a container having all of the elements stated previously. Eckert et al. and Meinel do not expressly disclose an apparatus for use in measuring fluid levels further including spacers attached to the rod, adapted to generally radially center the rod within the tube; a plurality of spaced notches, the notches adapted to receive the spacers and prevent the spacers from moving longitudinally along the rod; the spacers

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having radial extensions adapted to not penetrate the slots in the tube; the radial extension has a width wider than the width of the slots in the tube. Gregory discloses an apparatus for measuring fluid levels (Figs. 1 and 2) having spacers (20) with radial extensions (21) to radially center a rod (18) within a tube (16); as well as the use of spiders/spacers placed at regular spacings longitudinally that are located by sitting in grooves or engaging holes machine in the rod or surrounding tube (Gregory: page 2, lines 13-28). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ spacers with all the associated attributes, as taught by Gregory, modifying the apparatus for measuring fluids disclosed by Eckert et al. and Meinel, thus providing uniformity of signal as well as support against shock and vibration (Gregory: col. 2, lines 13-18). In specific regards to claims 18 and 19, it is considered an obvious design choice to one of ordinary skill in the art to employ the spacers of the proper size and overall shape without interfering with the slots in the tube, since these slots allow for the flow and equalization of pressure of the fluid whose level is to be measured. Clearly, the spacers taught by Gregory may be easily employed in this manner due to their overall shape (see Fig. 2 below).



7. Claims 20 and 22-26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US 6,155,112 to Eckert et al., and US 6,325,391 to Smith et al., US 6,184,818 to Meinel, and GB 2385478 A to Gregory. Eckert et al. disclose an apparatus for use in measuring fluid levels in a container (3) (Figs. 1 and 2) by determining the point where an upper fluid contacts a gas having an exposed microwave transceiver sensor head (5) (Eckert et al.: col. 5, lines 12-17) positioned externally from the container; a sensor rod/waveguide (7) comprised of a plurality of circular/curved cross-sections, threaded rod sections (70, 71, 72) allowing for screwed-connections; wherein the outer surface of the rod sections may “have different cross-sectional geometries, compatible with the mode to be transmitted and the transmission frequency or frequencies, thus inherently encompassing recitations of claim 20) (Eckert et al: col. 5, lines 54-56) and further having a head flange (12) adapted to be connected to a corresponding container flange (21) (see Fig. 1 above). Eckert et al. do not expressly disclose the employment of tamper-proof restraints attached to the head flange; a gauge tube surrounding the rod, the tube

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comprising a plurality of tube sections adapted to be connected together (via a plurality of fasteners) and a plurality of circumferentially and longitudinally spaced slots in the tube and which are positioned on the tube so as to allow fluid equalization within the tube; wherein the rod sections are adapted to be connected/disconnected together and inserted/removed from the tube without disconnecting the tube sections; wherein at least one tube section is curved (as recited in claim 14). Meinel teaches an apparatus for measuring fluid levels within a container (2) (Figs. 1-4) having a rod (6) surrounded by a 'curved' hollow tube (11) for guiding a coupled-in microwave generated at a sensor head (4); the tube having a plurality of holes/openings (10, 16) (note: size and shape of the openings, such a slots are obvious variants known to one of ordinary skill in the art) located circumferentially and longitudinally of the tube for allowing flow into the tube (Meinel: claim 7) and fluid contact the outer surface of the rod (as recited in claim 20). Meinel further teaches the removal/insertion of the tube and rod and subsequent retrofitting (Meinel: col. 3, lines 9-22). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a tube having openings surrounding the rod, as taught by Meinel, forming it in a plurality sections, utilizing any type of well known fasteners or threaded ends, similar to the rod sections disclosed by Eckert et al., since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Newin v. Erlichman*, 168 USPQ 177 (BdPatApp&Int 1969). Eckert et al. and Meinel disclose an apparatus for use in measuring fluid levels within a container having all of the elements stated previously. Eckert et al. and Meinel do not expressly disclose an apparatus for use in measuring fluid levels further including spacers attached to the rod, adapted to generally radially center the rod within the tube; a plurality of spaced notches, the notches adapted to

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receive the spacers and prevent the spacers from moving longitudinally along the rod; the spacers having radial extensions adapted to not penetrate the slots in the tube; the radial extension has a width wider than the width of the slots in the tube. Gregory discloses an apparatus for measuring fluid levels (Figs. 1 and 2) having spacers (20) with radial extensions (21) to radially center a rod (18) within a tube (16); as well as the use of spiders/spacers placed at regular spacings longitudinally that are located by sitting in grooves or engaging holes machine in the rod or surrounding tube (Gregory: page 2, lines 13-28). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ spacers with all the associated attributes, as taught by Gregory, modifying the apparatus for measuring fluids disclosed by Eckert et al. and Meinel, thus providing uniformity of signal as well as support against shock and vibration (Gregory: col. 2, lines 13-18). Furthermore, it is considered an obvious design choice to one of ordinary skill in the art to employ the spacers of the proper size and overall shape without interfering with the slots in the tube, since these slots allow for the flow and equalization of pressure of the fluid whose level is to be measured. Clearly, the spacers taught by Gregory may be easily employed in this manner due to their overall shape (see Fig. 2 below). In specific regards to claims 22-26, it is considered obvious to one of ordinary skill in the art at the time the invention was made to employ any method to assemble/install or the cleaning the individual components of the apparatus for measuring the fluid level within a container disclosed by Eckert et al., Meinel and Gregory in any desired manner or fashion.

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Allowable Subject Matter

8. Claims 8, 14 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is invited to review the Prior Art cited on PTO form 892 attached to this office action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Fitzgerald whose telephone number is (571) 272-2843. The

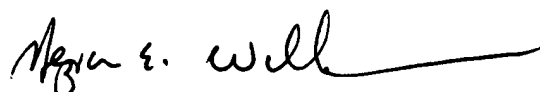
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examiner can normally be reached on Monday-Friday from 7:00 AM to 3:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams, can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JF

04/15/2005



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